These features are best seen on the negatives, though they are also well shown on the enlargements.

Stars in Cygnus.

Admiral Mouchez presented to the Society four beautiful photographs, by the Brothers Henry, of stars in *Cygnus*. One of them taken on August 14, 1885, has A. R. $19^h\ 45^m$ and D. $35°\ 30'$. On August 23, 1886, I took a photograph of the same sky space, and on August 14 this year again another. These have been enlarged 3 times, and they serve to illustrate what has frequently happened in my experience of stellar photography—that with similar plates, exposed to a given sky space for an equal length of time, and apparently with equal clearness of sky, there are surprising differences in the number of the stars that can at any time be photographed.

In the three photographs to which reference is here made these differences are remarkable, and to enable us to appreciate them, I counted one-eighteenth (17·75) of the stars upon corresponding areas on each plate respectively, and by measurements and calculations founded upon these data arrived at the following results :—

1st. The number of stars upon MM. Henry's plate in 1885 equal	3124
2nd. The number of stars upon my plate of 1886, having a sky area coincident with that of MM. Henry's plate equal	5023
3rd. The number of stars upon my plate of 1887 with coincident sky area equal	16206

The exposures in each case were of 60 minutes' duration, yet the third plate has upon it more than five times as many stars as the first.

These facts point out one of the difficulties that will be frequently met with by those who will be participating in the formation of the projected international photographic chart of the stars which is intended to include stars down to the 14th magnitude, with exposures of 15 minutes; but I am not here suggesting that the difficulties cannot be overcome. These discrepancies may be due to several causes, mechanical, chemical, and atmospheric, acting differently at different times.

On the Measurement of Celestial Photographs. (Extract from a Letter to the President.) By Isaac Roberts.

I wish to ascertain if some of the Fellows of the Society would be willing to engage in the scientific work of stellar photography by determining from negatives—

First. Stellar parallax.

Second. Stellar proper motion.

Third. Stellar photographic magnitudes.

Fourth. Stellar colour and variability.

Fifth. Stellar work not particularised above.

May I therefore ask you to communicate to the Fellows the offer that I should be willing to place in their hands such negatives as would enable a limited number of them to conduct with the necessary accuracy the investigations enumerated in these suggestions?

The essential equipment required by any worker would be: 1st, a good position micrometer; 2nd, a microscope of simple construction with 1-inch and 3-inch objectives, a sliding stage 7 inches × 7 inches (a plate of glass would do), and a reflecting mirror beneath it.

With such inexpensive appliances as here named astronomical work of the highest accuracy could be done, without the costly equatorial and transit instruments, and without the physical exposure at night which is unavoidable in using them.

I would supply the negatives free of cost, and only stipulate in return that each worker should have the necessary knowledge and perseverance to pursue the investigations he undertakes, and that he should communicate the results to the Society in a form acceptable to the Council.

1887, *November* 7.

On the Appearances presented by the Satellites of Jupiter during Transit, with a Photometric Estimation of their Relative Albedos, and of the Amount of Light Reflected from the Different Portions of an Unpolished Sphere. By Edmund J. Spitta.

Since their discovery by Galileo in 1610, the satellites of *Jupiter* have met with much attention, both from the mathematical as well as the physical astronomer. It is not the purpose, however, of this paper to deal with the former class of investigation, and only with so much of the latter as strictly relates to the appearances presented by the satellites during transit.

It is needless to state that during superior conjunction the satellites have from times most remote presented appearances not satisfactorily accounted for; appearances, too, which do not seem to apply equally to all the satellites, or even in some instances to the same satellite in two successive revolutions.

Passing over the first observation of the kind by Cassini in 1665, the next is recorded by Maraldi in 1707, who wrote two memoirs to the Paris Academy upon the subject, his interest having been excited by witnessing the third satellite transit as a dark spot on April 4, but as a white one during the next revolution on April 11. From this time up to the present date numerous observers, amongst whom might be mentioned